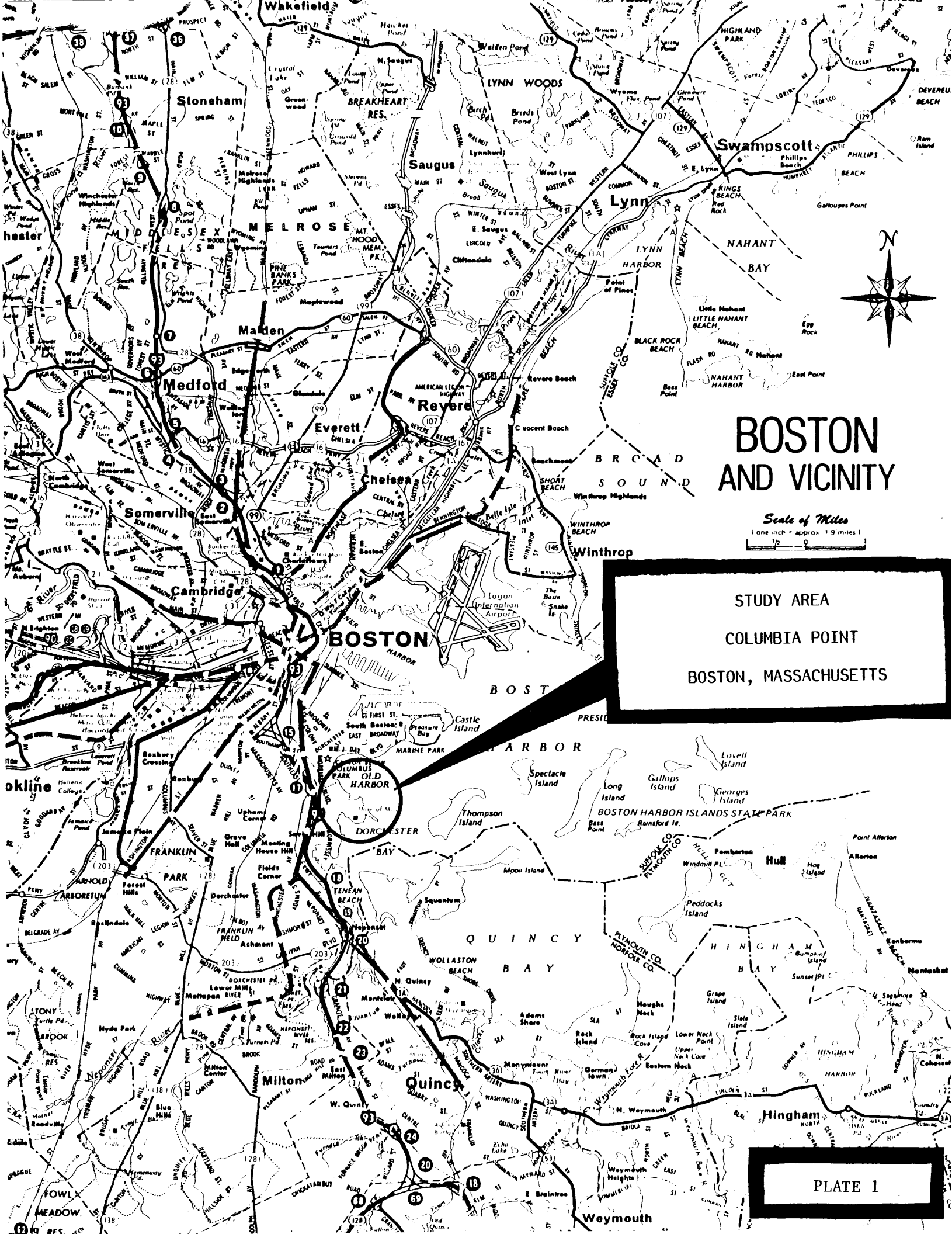


COLUMBIA POINT  
BOSTON, MASSACHUSETTS

SMALL BOAT NAVIGATION PROJECT  
RECONNAISSANCE REPORT

DEPARTMENT OF THE ARMY  
NEW ENGLAND DIVISION, CORPS OF ENGINEERS  
WALTHAM, MASSACHUSETTS

SEPTEMBER 1980



# BOSTON AND VICINITY

Scale of Miles  
One inch = approx. 1.9 miles  
1 2 3 4 5 6 7 8 9 10

STUDY AREA  
COLUMBIA POINT  
BOSTON, MASSACHUSETTS

PLATE 1

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## INTRODUCTION

This report is a preliminary engineering and economic feasibility study of proposed navigational improvements for Columbia Point, Boston, Massachusetts.

Columbia Point, located three miles southeast of downtown Boston, is the site of a new development program which, it is hoped, will stimulate the existing community and promote the generation of a new mixed income community with recreational, shopping, and community facilities. As part of this overall development plan, the city has proposed a recreational boat basin, to be located near the John F. Kennedy Memorial Library. It is considered to be an important element of this new development program, since it will be a recreation site for this and surrounding neighborhoods and will provide alternative water transit opportunities for persons traveling to and from the Columbia Point area.

On 4 March 1980, the city of Boston officially requested that the Corps of Engineers initiate an investigation under the authority of Section 107 of the River and Harbor Act of 1960, to study the feasibility of Federal participation in the development and construction of waterfront improvements for the Columbia Point area.

This reconnaissance report was prepared in response to that request as a first step in the evaluation of the feasibility of navigation improvements in the Columbia Point area. The purpose of this reconnaissance report is to determine if there is economic justification for carrying out a detailed study of navigational improvements. The purpose of this report is not to formulate the optimum plan of improvement, but only to determine if there is some feasible plan that may, with detailed study, prove to be in the Federal interest if constructed.

### Study Authority

This reconnaissance report is submitted under the authority and provisions of Section 107 of the 1960 River and Harbor Act, as amended.

### Purpose and Scope of the Study

The purpose of this study is to determine if there is economic justification for undertaking a detailed study of navigation improvements in the Columbia Point area. The study was developed using readily available information obtained from the city of Boston, concerned citizens, and a reconnaissance investigation of the area.

The scope of the study was limited to a preliminary economic evaluation of a preliminary alternative plan of improvement. If a detailed study is performed, other parameters such as environmental and social impacts will be fully evaluated for a number of alternative plans in order to optimize the effectiveness of any recommended plan of improvement.

The geographic scope of this study was generally limited to the northeastern portion of the Columbia Point Peninsula and to those portions of Old Harbor and Dorchester Bay immediately adjacent to the northeastern portion of the Columbia Point Peninsula, as illustrated in Plate 1.

## Study Participants and Coordination

Various offices and officials of the city of Boston were coordinated with in an attempt to define the problems and needs of the study area and to identify readily available data to be used in this report.

If a detailed study is performed, extensive coordination will be carried out in the detailed report phase with all appropriate, Federal, State, regional, and local interests.

## Other Studies

### Prior Studies

In 1977, a report on water resource improvements at Columbia Point, Boston, Massachusetts was prepared by the U.S. Army Corps of Engineers. The purpose of the report was to provide technical assistance for public and private agencies which have direct interest in the future of the development of the area. The report investigated the water resource development problems of the area and qualitatively outlined several possible solutions.

### Ongoing Studies

The U.S. Army Corps of Engineers is currently performing a Section 103 Beach Erosion Reconnaissance Study of the Columbia Point area. Construction of a breakwater may create adverse wave diffraction with impacts to adjacent land areas. Therefore, any detailed navigation improvement must be closely coordinated with the ongoing 103 Beach Erosion Study to assure that the optimum overall solution is recommended.

## PROBLEM IDENTIFICATION

The prime function of this section, as the title implies, is to identify the problems and needs of the study area in an attempt to delineate management measures that will address those problems and fulfill the needs identified. This is done by ascertaining the existing conditions, making an informed prediction of future conditions without Federal assistance, interviewing local interests in the study area, and using this information to identify areas of concern that must be addressed in the planning process. Efforts are then made to identify any physical conditions, laws, policies, or any other considerations that may constrain implementation of certain resource management measures. Through this knowledge of local needs and opportunities and any constraints that may be identified, the planning process can be directed toward the fulfillment of specific planning objectives formulated with this information and national objectives in mind.

### National Objectives

Planning for navigation improvements in the Columbia Point area is based on the national objectives of National Economic Development (NED) and Environmental Quality (EQ), as set forth in 1973 by the National Water Resources Council in Principles and Standards for Planning Water and Related Land Resources. The

purpose of the Principles and Standards is to promote the quality of life by planning for the attainment of these national objectives as defined below:

NED Objective -

To enhance national economic development by increasing the value of the nation's output of goods and services, and by improving national economic efficiency.

EQ Objective -

To enhance the quality of the environment by the management, conservation, preservation, creation, restoration, or improvement of certain natural resources, cultural resources, and ecological systems.

The Study Area and Existing Conditions

Columbia Point, Boston, is located in eastern Massachusetts, approximately three miles southeast of downtown Boston. This 351 acre peninsula jutting into Dorchester Bay faces Old Harbor on the northeast and Savin Hill Cove on the southeast. With an existing two mile shoreline and a northeastern area overlooking the Boston skyline, Columbia Point offers a prime waterfront location for development. The peninsula extends on the northeast from Mother's Rest at Carson Beach and southeasterly to the J.F.K. Memorial Library on the eastern tip. Access is attained from the northwest by the Southeast Expressway and Morrissey Boulevard. As the attached map illustrates (see Plate 1) the proposed area of local development is located on the shore of Old Harbor along the northeastern section of Columbia Point near the John F. Kennedy Memorial Library. The project area has a tidal range of 9.5 feet, and can be located on the U.S. Geological Survey Map titled "Boston South, Massachusetts."

The Columbia Point community consists of approximately 1,100 persons living throughout an existing housing development, a few businesses, and limited recreational facilities. The housing development now stands with over 80 percent of its units vacant and is in general disrepair. A small recreational area consisting of a city-owned ball park is located just north of the housing projects. Businesses are few in number, comprised mainly of the First National Bank computer facility, the Boston Globe main office, and several other small retail and manufacturing facilities scattered throughout a largely abandoned Bayside Mall. Also, located on the far eastern portion of the peninsula are the John F. Kennedy Memorial Library and the University of Massachusetts harbor campus.

Conditions If No Federal Action Taken

Without the proposed project, development of a boat marina and access channel is not likely. Landside redevelopment could be expected to continue throughout the peninsula; but only a limited amount of recreational boating might be expected in the future. This would result in a loss of potential recreational activities and enhancement of the overall redevelopment would be slighted.

## Problems, Needs and Opportunities

The problems, needs, and opportunities of the study area are in most ways related to the efforts by the city of Boston to redevelop the Columbia Point area.

The Columbia Point community is in general disrepair. Abandonment of the housing projects by local residents and the vacancy of 85 percent of the commercial district have contributed greatly to unemployment, under-employment, and poverty within the community. This situation currently exists and shows no capacity for improvement within the community alone. Lack of recreational facilities and physical isolation of the peninsula has also added to socio-economic decline of the area. Although Columbia Point is bordered on three sides by water, virtually no public water transit or recreational facility currently exists.

The navigational need of the community as developed through the identification of its problems are evident--assistance in the development of a project which will allow for increased water-related recreational and transit opportunities, such as a commuter ferry service, within the study area. These water-related developments would greatly enhance the overall area redevelopment plan.

With the addition of the proposed boat basin and access channel, opportunities for potential private and commercial establishments along the waterfront will be enhanced and the area can take advantage of its waterfront location.

## Planning Constraints

In attempting to develop management measures that may solve problems and fulfill the needs identified above, consideration must be given to any constraints that limit the available scope of solutions and are, therefore, used to direct plan formulation and restrict impacts. Such constraints can be of many different types originating from different sources. They may include natural conditions within the project site, technological states of the art, economic limitations, or legislative restrictions.

Due to the level of detail involved in a reconnaissance report, no readily recognized planning constraints have been identified, for the study area.

However, based upon current and previous Corps studies for the Columbia Point area, the following concerns are known to exist.

Construction of a boat basin and breakwater may have a detrimental impact on water quality. Therefore, any proposed development must insure an adequate level of tidal flushing action to minimize any impacts to water quality.

A second concern identified is the suspected quality of the bottom material in the areas of proposed dredging. Any proposed project must minimize the removal of toxic materials to reduce the adverse effects on marine life. As a corollary, minimal removal of any materials will significantly lessen any expected impacts associated with disposal of dredged materials:

Another concern is the importance of coordination of any recommended navigation improvements with the overall Columbia Point Redevelopment Plan. Alternative solutions should be evaluated in an attempt to maximize their contribution to the viability of the total redevelopment project. In summary, concerns identified to date are:

- . minimize impacts to water quality
- . minimize removal of toxic materials
- . integrate water resource plans with overall Columbia Point redevelopment plan

If a detailed study is performed, efforts will be made to identify definite planning constraints that may exist in the study area.

#### Planning Objectives

Planning objectives are basically statements that restate national, State and local water and related land resource management programs and needs for the given study area in a positive manner. Planning objectives identify areas that can and should be addressed to enhance NED or EQ.

Based on consideration of known areas of public concern and anticipated "without project" conditions, the following planning objectives were identified for the study:

- Contribute to navigation for public recreational purposes in the Columbia Point area during the 1980-2030 period of analysis.
- Contribute to the protection of recreational vessels that will moor in the Columbia Point area during the 1980-2030 period of analysis.

#### FORMULATION OF A PRELIMINARY PLAN

Systematic consideration of the problems, needs, and opportunities led to the formulation of a preliminary plan. This plan was designed to achieve the planning objectives stated previously. State and local objectives were also paramount considerations in the evaluation of this plan.

#### Management Measures

As the basis for formulating a preliminary plan, a broad range of management measures can be identified to address the planning objectives. Management measures can generally be categorized as either structural or nonstructural and both types should be considered in equal detail.

Structural measures would generally involve variations on dredging a channel for the Columbia Point study area to provide access to the proposed marina site.

Historically, the area north of Cane Cove is affected by severe winter storms known as "northeasters," therefore the proposed marina will also require some

degree of wave protection from the northeast. Likewise, structural measures will also include variations on the type of wave protection, needed to insure the protection of the boats and support facilities expected to be developed.

Nonstructural measures would principally involve the achievement of planning objectives by other means, without physical construction and at lower costs, such as relocation.

At this stage of the study, only the previously outlined management measures were identified as meeting the overall study objectives. If further study is performed, an attempt will be made to identify more management measures.

#### Plans of Others

The proposed redevelopment of the Columbia Point community by the city of Boston would have major influence on the proposed water resources improvement project. The Columbia Point waterfront improvements should be considered an integral part of those plans.

No formal plans have been formulated for the newly proposed boat basin and access channel in the study area. Town officials have indicated their desire for a boat basin with a capacity of approximately 200 recreational craft.

#### Plan Formulation

Utilizing a knowledge of the problems and needs in the study area, management measures were combined into resource management plans, and the plans refined into an alternative plan of action that meets the planning objectives and area needs.

Alternative sites that satisfy the needs of the community will be investigated if a detailed study is performed. At this stage of the study, one alternative site, namely located on the northeast shoreline near the Kennedy Library, has been investigated since that site is preferred by local proponents of the project.

The limited scope of this report requires that certain basic assumptions be made in formulating a plan of improvement.

To determine channel dimensions, a recreational design vessel of 30-35 feet in length has been adopted for this analysis. Although various channel dimensions will be studied in detail, if further study is performed, a channel depth of 6 feet mlw with a width of 80 feet was assumed to be the minimum allowable dimensions to allow efficient and safe passage of two boats of the diversion assumed for design.

Quantity estimates within the proposed channel dimensions are based on general bottom contours taken from the U.S. Coast Guard Chart Number 13270. Based on prior dredging projects in the area, ledge is not expected to be encountered within the proposed channel limits.

Disposal of the dredged material may be used as landfill for the redevelopment of the Columbia Point area. However, as this is dependent upon the composition

of the material and coordination of redevelopment plans with dredging operations, the more expensive option of ocean disposal has been used in estimating all construction costs. The designated disposal area, the Boston Foul Area, is located approximately 14 miles from the project site.

Construction of the breakwater has also utilized basic assumptions in lieu of accurate detailed data. Based upon historic data the primary wave approach has been determined to be from the northeast. Design criteria for the breakwater utilized an assumed base elevation of 0 feet mlw and a tidal range of 9.5 feet. A design wave height of four feet was assumed to provide adequate northeasterly wave protection, according to a 1977 wave analysis of the study area performed by the U.S. Army Corps of Engineers. The analysis was performed utilizing information provided by University of Massachusetts and the Department of Environmental Management, in conjunction with a regression of formulae, to size stone for shore protection. The breakwater was assumed to be a rubble-mound structure. Although there are many types and configurations of breakwaters which can be analyzed, this report has concentrated on an offshore, permanent linear breakwater.

### ASSESSMENT OF A SINGLE PLAN

As stated in the introduction section of this report, the purpose of this report is not to formulate and assess the optimum plan of improvement, but only to determine if there is some feasible plan that may prove to be in the Federal interest. This is done only as a decision making tool to evaluate the need for detailed study of many alternatives. The plan evaluated herein is not necessarily the plan that will be selected after a detailed analysis is performed.

#### Alternative Plan Chosen for Evaluation

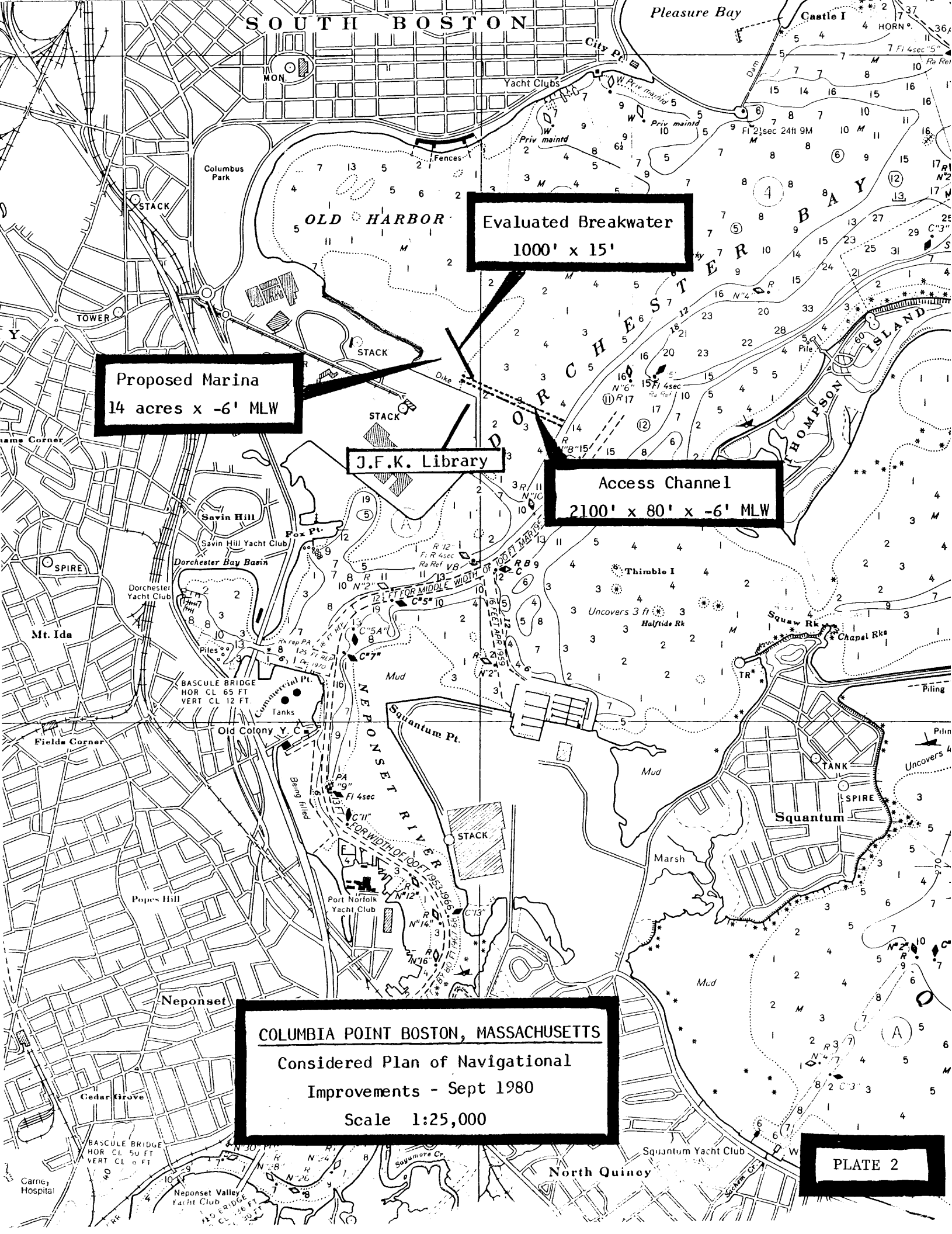
For the purpose of evaluation of the need for detailed study, a marina with a permanent, linear, off-shore breakwater and access channel will be evaluated. Insufficient hydrographic and engineering data is currently available to perform a meaningful alternative analysis at the present time.

The plan to be evaluated is depicted graphically on Plate II. It includes the development and construction of a breakwater and access channel.

With construction of the breakwater, measuring 15 feet high mlw and approximately 1,000 feet in length, adequate wave protection will be provided for approximately 14 acres of water area on the southwestern side of the structure.

For purposes of this report, it has been assumed that the previously stated acreage for the basin would be more than sufficient to accommodate the anticipated fleet of 200 boats, transient craft and commuter ferry service.

The access channel, located parallel to the northeastern shoreline of the peninsula, was developed on the assumption of an average existing depth of 3 feet at MLW. It measures 80 feet in width and 2,100 feet in length. A design depth of -6 feet MLW was considered sufficient to meet the needs of the anticipated fleet.



SOUTH BOSTON

Pleasure Bay

Castle I

4 HORN

Evaluated Breakwater  
1000' x 15'

Proposed Marina  
14 acres x -6' MLW

J.F.K. Library

Access Channel  
2100' x 80' x -6' MLW

COLUMBIA POINT BOSTON, MASSACHUSETTS  
Considered Plan of Navigational  
Improvements - Sept 1980  
Scale 1:25,000

PLATE 2

A disposal site for the dredged material has not yet been determined, but as previously mentioned, ocean disposal at the Boston foul site has been used for purposes of estimating the first cost of construction.

### Estimate of Costs

The plan of improvement would involve the construction of a breakwater and access channel. Cost estimates do not account for the dredging of the area within the boat basin as local plans for basin development may include permanent slips and service structures precluding government participation. The U.S. Coast Guard would provide and maintain all aids to navigation. The estimated first cost is based on December 1979 price levels, assuming a rubble-mound type breakwater and the use of a 3 cubic yard bucket dredge with disposal at sea. Specific costs for navigation aids will be obtained from the U.S. Coast Guard in the Detailed Project Report Stage. Table I depicts the first cost of the evaluated plan of improvement.

TABLE I  
EVALUATED PLAN OF IMPROVEMENT

Dredging of Channel 25,600 cu. yds. @ \$8.00/cy	\$204,800
(Ordinary Material)	.
Contingencies (15%)	30,720
Subtotal	<u>235,520</u>
Engineering (7%)	16,486
Supervision and Administration (8%)	18,842
Channel Subtotal	<u>\$270,848</u>
	Say 271,000
Breakwater 35,270 tons @ \$28/ton	\$987,560
(Rubble-mound)	
Contingencies (15%)	\$148,134
Subtotal	<u>1,135,694</u>
Engineering (7%)	79,500
Supervision and Administration (8%)	90,856
Breakwater Subtotal	<u>\$1,306,050</u>
	Say \$1,306,000
Aids to Navigation	5,000
Total First Cost	<u>\$1,582,000</u>

Annual charges are based on an estimated project life of 50 years, and an interest rate of 7-1/8 percent. Maintenance is based on an assumed annual shoal rate of 4 percent and stone replacement of 1 percent. The annual charges are shown in Table II.

TABLE II  
ANNUAL CHARGES

Amortization (\$1,582,000 x 0.073607)	\$116,446
Annual Maintenance - Channel Dredging (4% of 25,600 cy @ \$8.00/cy)	8,192
Annual Maintenance - Breakwater (1% of 35,270 tons @ \$28/ton)	9,876
Aids to Navigation	2,500
Total Annual Charges	<u>\$137,014</u>
Say	\$137,000

Estimate of Benefits

Navigational improvements at the Columbia Point study area would result in substantial benefits to prospective recreational boating interests. Recreational benefits have been computed on the basis of net annual return to boat owners if their respective boats were for hire in accordance with the established policy of the Corps of Engineers.

Benefits have been evaluated for boats expected to be attracted to the project immediately after improvements are made, as well as new boats attracted to the site within a ten-year growth period. Transient vessels attracted to the area because of its convenient location and the shelter it will provide during periods of storm have also been evaluated. It should be noted that the possible utilization of the site by commuter and excursion ferries has not been included in this analysis but will be in the detailed project report stage.

The projected recreational fleet characteristics were based upon a study of four marinas considered to be representative of conditions at Columbia Point. The percentage of sailboats was increased over those observed, due to anticipated long-term changes in the availability and cost of petroleum-based fuels.

The estimated benefits are presented in Tables III, IV, V, and VI.

# 1979 BOATING VALUES

TABLE III BENEFITS TO RECREATIONAL BOATING

HARBOR: Columbia Point, Boston, MA

Immediately After Improvements

TYPE OF CRAFT	LENGTH (feet)	# of Boats	DEPRECIATED VALUE		PERCENT RETURN			VALUE \$	ON CRUISE		
			Average \$	Total \$	Ideal	% of Ideal			Avg Days	% of Season	Value \$
						Pres.	Fut.				
RECREATIONAL FLEET											
Outboards	15-20	11	3900	42900	13	0	100	5577	13		
	21 & Up	3	7750	23250	13	0	100	3023	13		
Sterndrive	15-20	4	6550	26200	12	0	100	3144	12		
	21-25	14	9850	137900	11	0	100	15169	11		
	26 & Up	2	22600	45200	10	0	100	45271	10		
Inboards	15-20	1	7350	7350	12	0	100	882	12		
	21-30	21	16680	350280	12	0	100	42034	12	9	3783
	31-40	12	45500	546000	11	0	100	60060	11	12	7207
	41-50	0	103600	0							
	51-Up	0	240800	0							
Cruising Sailboats	15-20	3	4850	14550	8	0	100	1164	8		
	21-30	25	15600	390000	8	0	85	26520	6.8	5	1326
	31-40	14	43200	604800	7	0	75	32054	5.3	16	5129
	41&Up	0	85550	0							
Daysailers	8-15	1	1400	1400	12	0	100	168	12		
	16-20	8	3450	27600	12	0	100	3312	12		
	21-25	1	6350	6350	11	0	100	699	11	5	35
	26&Up	0	12050	0							
Totals		120						198,326			17,480

Annual Net Benefits \$198,326 - \$17,480 = \$180,846  
say \$180,900

# 1979 BOATING VALUES

TABLE IV BENEFITS TO RECREATIONAL BOATING

HARBOR: Columbia Point, Boston, MA

Future Expansion (10-Year St. Line Growth)

TYPE OF CRAFT	LENGTH (feet)	# of Boats	DEPRECIATED VALUE		PERCENT RETURN			VALUE \$	ON CRUISE		
			Average \$	Total \$	Ideal	% of Ideal			Avg Days	% of Season	Value \$
						Pres.	Fut.				
RECREATIONAL FLEET											
Outboards	15-20	7	3900	27300	13	0	100	13	3549		
	21 & Up	1	7750	7750	13	0	100	13	1008		
Sterndrive	15-20	2	6550	13100	12	0	100	12	1572		
	21-25	10	9850	98500	11	0	100	11	10835		
	26 & Up	2	22600	45200	10	0	100	10	4520		
Inboards	15-20	1	7350	7350	12	0	100	12	882		
	21-30	14	16680	223520	12	0	100	12	28023	2522	
	31-40	8	45500	364000	11	0	100	11	40040	4805	
	41-50	0	103600								
	51-Up	0	240800								
Cruising Sailboats	15-20	1	4850	4850	8	0	100	8	388		
	21-30	17	15600	265200	8	0	85	6.8	18034	902	
	31-40	10	43200	432000	7	0	75	5.3	22896	3664	
	41&Up	0	85550								
Daysailers	8-15	1	1400	1400	12	0	100	12	168		
	16-20	5	3450	17250	12	0	100	12	2070		
	21-25	1	6350	6350	11	0	100	11	699	35	
	26&Up		12050								
Totals		80							134,684	11,928	

Annual Net Benefits \$134,684 - \$11,928 = \$122,756

say \$122,800

10 Year St. Line Growth  
 \$122,800 x Av. An. Equivalent  
 \$122,800 x 0.739385 = \$90,797  
 say \$90,800

# 1979 BOATING VALUES

TABLE V BENEFITS TO RECREATIONAL BOATING

HARBOR: Columbia Point, Boston, MA

Transient Fleet

TYPE OF CRAFT	LENGTH (feet)	# of Boats	DEPRECIATED VALUE		PERCENT RETURN			VALUE \$	ON CRUISE		
			Average \$	Total \$	Ideal	% of Ideal			Avg Days	% of Season	Value \$
						Pres.	Fut.				
RECREATIONAL FLEET											
Outboards	15-20	4	3900	15600	13	0	100	13	2028		
	21 & Up	1	7750	7750	13	0	100	13	1008		
Sterndrive	15-20	1	6550	6550	12	0	100	12	786		
	21-25	4	9850	39400	11	0	100	11	4334		
	26 & Up		22600								
Inboards	15-20		7350								
	21-30		16680								
	31-40		4500								
	41-50		103600								
	51-Up		240800								
Cruising Sailboats	15-20		4850								
	21-30		15600								
	31-40		43200								
	41&Up		85550								
Daysailers	8-15		1400								
	16-20		3450								
	21-25		6350								
	26&Up		12050								
Totals		10									8,156

Annual Net Benefits = \$8,156

say \$8,200

TABLE VI  
BENEFITS

New Boats Immediately After Improvements	\$180,900
New Boats - 10 Year Growth	90,800
Transient Boats - Equivalent	8,200
Total Benefits	<u>\$279,900</u>
Say	\$280,000

Comparison of Benefits and Costs

As stated in the discussion of National Objectives, national economic development is one of the two prime national objectives. A proposed plan's contribution to the national economic development is measured by comparing the project's annual benefits and costs as a ratio. If the benefit-cost ratio is greater than or equal to 1:0, the project is considered to have a positive effect on national economic development. The benefit-cost ratio for the evaluated plan is presented in Table VII.

TABLE VII  
COMPUTATION OF THE BENEFIT-COST RATIO

<u>Benefits</u>	<u>Costs</u>	<u>B/C Ratio</u>
\$280,000	\$132,000	2.12

Apportionment of Cost

The first cost of construction of the evaluated plan is apportioned 50 percent Federal and 50 percent non-Federal.

Allocation of Cost

All costs of this evaluated plan would be attributed to construction of the channel, breakwater, and navigational aids.

Federal Responsibilities

Fifty percent of the first cost of project construction and 100 percent of project maintenance costs would be borne by the Federal Government.

Local Requirements

(1) Provide a cash contribution toward construction costs, determined in accordance with existing policies for regularly authorized projects, in view of recreational benefits, land enhancement benefits or similar type special and land benefits expected to accrue. The present basis for cost-sharing in recreational small-boat projects provides that the Federal Government will bear not more than 50 percent of the first costs of general navigation facilities serving recreational traffic.

(2) Provide, maintain, and operate without cost to the United States and adequate public landing with provisions for the sale of motor fuel, lubricants, and potable water open and available to the use of all on equal terms.

(3) Provide, without cost to the United States, all necessary lands, easements, and rights-of-way required for construction and subsequent maintenance of the project, including suitable dredged material disposal areas with necessary retaining dikes, bulkheads, and embankments therefore.

(4) Hold and save the United States free from damages that may result from construction and maintenance of the project.

(5) Accomplish without cost to the United States alterations and relocations as required in sewer, water supply, drainage, and other utility facilities.

(6) Provide and maintain berths, floats, piers, and similar marina and mooring facilities as needed for transient and local vessels, as well as necessary access roads, parking areas, and other need public-use shore facilities open and available to all on equal terms. Only minimum, basic facilities and services are required as part of the project. The actual scope or extent of facilities and services provided over and above the required minimum is a matter of local decision. The manner of financing such facilities and services is a local responsibility.

(7) Assume full responsibility for all project costs in excess of the Federal cost limitation of \$2,000,000 under the 107 program.

(8) Establish regulations prohibiting the discharge of untreated sewage, garbage, and other pollutants in the waters of the harbor users thereof, which regulations shall be in accordance with applicable laws or regulations of Federal, State, and local authorities responsible for pollution prevention and control.

#### Impact and Mitigation Considerations

Environmental and mitigation considerations have not been evaluated at this stage of the study. If a detailed study is performed, impacts and mitigation requirements will be outlined and considered in detail at that time.

#### Public Views

In a letter dated 27 October 1980, the city of Boston concurred with the findings of this report and recommended the Detailed Project Report be undertaken. The letter of concurrence is inclosed.

#### REQUIREMENTS FOR FURTHER STUDY

This report, as described previously, is a preliminary report based on readily available data to evaluate the need for detailed study of navigation improvements at Columbia Point, Boston. If a more detailed study is performed it will include many items outlined in this report.

### Existing Conditions

The existing conditions of the study area will have to be examined in much greater detail. Physical conditions will have to be examined through field visits, hydrographic studies, borings, and other engineering analyses. The existing economic conditions will have to be detailed through field visits and interviews with local interests. Environmental conditions at the site will be evaluated through field surveys, review of existing data, and physical, chemical, and biological sampling and testing.

### Problems, Needs and Opportunities

The problems, needs, and opportunities will be delineated in greater detail through interviews with Federal, State, regional, and local interests.

### Constraints, Controls, and Objectives

Better delineation of planning constraints, controls, and objectives will be attained through detailed examination of physical conditions, laws and regulations, institutional analyses, area problems and needs, and overall national policy and objectives.

### Plan Formulation

Other alternative solutions will be formulated and evaluated in detail, with equal emphasis placed on structural and nonstructural proposals.

### Engineering Studies

Detailed engineering studies must be performed to accurately identify the optimum plan of improvement for the study area. Detailed hydrographic surveys will be performed to define bottom contours. Boring, probes and laboratory testing will be performed to ascertain the physical character and engineering properties of bottom sediments. Wave analyses will be performed to accurately forecast wave heights in the study area, and wave runup computations will be performed on any proposed structures. Wave refraction and diffraction analyses will be performed to evaluate the adequacy of protection provided by any structure and the impact of those structures on adjacent shorelines, and any other engineering analyses will be performed that may be required to fully assess proposed plans, quantify project costs and benefits, and recommend the optimum solution to the identified problems and needs.

### Economic Studies

Detailed economic studies will be carried out in an attempt to identify that plan which maximizes the benefit to the national economic development objective. Economic data will be developed through field visits, institutional studies, reference to economic statistics and all other studies, reports, and data available for review.

### Environmental Studies

Complete analyses of environmental impacts associated with each alternative plan developed will be carried out to evaluate the impacts, identify mitigation requirements and possibilities, and ultimately identify that alternative which contributes most or is least damaging to the environment. An environmental impact statement or environmental assessment will be written as part of any detailed study effort.

### Public Involvement and Coordination

At all stages of any detailed study effort, attempts will be made to identify all interested parties and keep them informed of study developments through public notices, public meetings, workshops, informal discussions, media contact, and any other possible means of effective communication. Public comments and input to the study effort will be accepted and considered at all stages of the study project.

## CONCLUSIONS

### Conclusions

According to preliminary analyses, there is at least one economically feasible plan for navigation improvements at Columbia Point, Boston. Local interests strongly support such navigation improvements that will complement any local development plans. Much more detailed analyses would be required before any final recommendation could be made, assuming an economically and environmentally sound solution to identified local problems and needs can be developed.

### Recommendation

Further detailed study of navigation improvements at Columbia Point, Boston, Massachusetts is recommended.

# Boston Redevelopment Authority

October 27, 1980

Colonel Max. B. Scheider  
Division Engineer  
New England Division  
U.S. Army Corps of Engineers  
424 Trapelo Road  
Waltham, MA 02154

Dear Colonel Scheider;

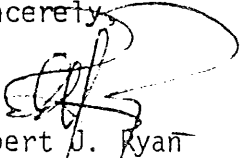
Thank you for forwarding copies of the Columbia Point Small Boat Navigational Project Reconnaissance Report to us on September 25, 1980.

The Reconnaissance Report thoroughly evaluates the need and feasibility of navigational improvements at Columbia Point. The Boston Redevelopment Authority generally approves of the findings of the Reconnaissance Report. We would, therefore, urge that the Corps of Engineers prepare a Detailed Project Report for the proposed navigational improvements.

The proposed navigational improvements would greatly enhance the redevelopment of Columbia Point by providing recreational boating opportunities to the proposed mixed-income community while providing important tourist access to the John F. Kennedy Library and proposed State Archives. They would also provide downtown and south shore commuter boat opportunities to over 5,000 employees and 7,500 students currently commuting to Columbia Point daily.

We are available to fully assist the Corps of Engineers in the development of a comprehensive plan of improvements to meet these needs.

Sincerely,



Robert J. Ryan  
Director

PROJECT COST SCHEDULE (\$000)	Appropriation Title: Construction General				Name of Study: Columbia Point Boston, MA	
TITLE	CURRENT FEDERAL COST ESTIMATE				REMARKS	
	1st year b	2nd year c	3rd year d	Total e		
a Preliminary Planning and Public Contact	2.0	7.0	-	9.0	f Detailed Project Report	
Hydrology Studies	-	-	-	-	will likely be	
Surveying and Mapping	20.0	-	-	20.0	accomplished in-house.	
Materials and Foundation Investigation	30.0	-	-	30.0		
Design and Cost Estimates	5.0	5.0	-	10.0		
Economic Studies	4.0	8.0	-	12.0		
Environmental Effects Assessment	25.0	10.0	-	35.0		
Fish and Wildlife Coordination	2.0	2.0	-	4.0		
Study Management	5.0	3.0	-	8.0		
Preparation of Scope of Work	10.0	-	-	10.0		
Preparation of Report	2.0	5.0	-	7.0	Capability	
Contingencies	-	-	-	-	FY82 105.0	
					FY83 40.0	
TOTAL	105.0	40.0		145.0		
Date Prepared October 1980	New England Division				Page 1 of 1	